

Having described the preferred embodiments, the invention is now claimed to be:

1. An apparatus for selecting an application to deliver content in a networked consumer environment based on multiple factors, comprising:
  - a means (22, 24, 34) for receiving an initial content selection;
  - a means (18) for i) accessing a list of registered applications for delivering content in the consumer environment and ii) accessing information identifying one or more types of content supported by each registered application in the list of registered applications;
  - a means (26, 30) for i) determining if any registered applications in the list of registered applications support any content types associated with the selected content, and ii) identifying each registered application in the list of registered applications that supports any of the content types associated with the selected content as a compatible application.
2. The apparatus as set forth in claim 1, the determining and identifying means (26, 30) further including:
  - a means (26, 30) for identifying zero or more equivalent content references associated with the initial content selection, the combination of the initial content selection and the equivalent content references forming a list of selected content.
3. The apparatus as set forth in claim 1, further including:
  - a means (22, 24, 34) for receiving an initial location selection within the consumer environment to which the content is to be delivered;
  - a means for accessing information identifying the user interface requirements associated with each compatible application;
  - a means (18) for i) accessing a list of sink resources for delivering content in the consumer environment and ii) accessing one or more graphs for each compatible application, each graph identifying sink resource requirements associated with the corresponding compatible application; and
  - a means (26, 30) for i) determining if any sink resource in the initially selected location supports the user interface requirements and the sink resource requirements of any of the compatible applications and ii) identifying each compatible application having sink

resource requirements that are satisfied by one or more sink resources in the initially selected location as a selected application.

4. The apparatus as set forth in claim 1, further including:

a means (18) for i) accessing a list of sources of content associated with the consumer environment and ii) accessing one or more graphs for each compatible application, each graph identifying source resource requirements associated with the corresponding compatible application; and

a means (26, 30) for i) identifying each source that provides any of the selected content, ii) determining if any source associated with any of the selected content supports the source resource requirements of any of the compatible applications, and iii) identifying each compatible application having source resource requirements that are satisfied by any source associated with the selected content as a selected application.

5. The apparatus as set forth in claim 1, further including:

a means (18) for i) accessing information associated with user preferences for each compatible application, ii) accessing information associated with previous executions of each compatible application, and iii) accessing one or more graphs for each compatible application, each graph identifying resource requirements associated with the corresponding compatible application; and

a means (26, 30) for determining a qualitative rating for each graph based on at least one of the user preference information, the previous executions information, and information associated with a graph preference by the corresponding compatible application.

6. The apparatus as set forth in claim 4, further including:

a means (30) for selecting the compatible application with the highest qualitative rating to deliver the content.

7. The apparatus as set forth in claim 1 wherein the accessing means is a network (18) interconnecting a plurality of electronic devices.

8. The apparatus as set forth in claim 1 wherein the receiving means is a user interface associated with a sink resource (22).
9. The apparatus as set forth in claim 1 wherein the receiving means is a user interface associated with a source resource (24).
10. The apparatus as set forth in claim 1 wherein the identifying and determining means is a centralized processing resource (30).
11. The apparatus as set forth in claim 1 wherein the identifying and determining means is a de-centralized processing resource (26) associated with a cluster (20).
12. A method for selecting an application to deliver content in a networked consumer environment based on multiple factors, the method comprising:
  - a) receiving an initial content selection;
  - b) accessing a list of registered applications for delivering content in the consumer environment;
  - c) accessing information identifying one or more types of content supported by each registered application in the list of registered applications;
  - d) determining if any registered applications in the list of registered applications support any content types associated with the selected content; and
  - e) identifying each registered application in the list of registered applications that supports any of the content types associated with the selected content as a compatible application.
13. The method as set forth in claim 12, further including before step b):  
identifying zero or more equivalent content references associated with the initial content selection, the combination of the initial content selection and the equivalent content references forming a list of selected content.

14. The method as set forth in claim 13 wherein a qualitative rating between 0 and 100 percent is associated with the initial content selection and each equivalent content reference based on an individual comparison of each of the initial content selection and equivalent content references to one of the initial content selection and equivalent content references having the highest quality.

15. The method as set forth in claim 14 wherein the list of selected content is limited to the initially selected content and equivalent content references with qualitative ratings above a predetermined value.

16. The method as set forth in claim 14, wherein the list of selected content including the qualitative ratings is provided to a user for reduction of one or more items for further application selection processing.

17. The method as set forth in claim 12, further including:

- receiving an initial location selection within the consumer environment to which the content is to be delivered;
- accessing information identifying the user interface requirements associated with each compatible application;
- accessing a list of sink resources for delivering content in the consumer environment;
- accessing one or more graphs for each compatible application, each graph identifying sink resource requirements associated with the corresponding compatible application;
- determining if any sink resource in the initially selected location supports the user interface requirements and the sink resource requirements of any of the compatible applications; and
- identifying each compatible application having sink resource requirements that are satisfied by one or more sink resources in the initially selected location as a selected application.

18. The method as set forth in claim 12, further including:

accessing a list of sources of content associated with the consumer environment;  
identifying each source that provides any of the selected content;  
accessing one or more graphs for each compatible application, each graph  
identifying source resource requirements associated with the corresponding compatible  
application;  
determining if any source associated with any of the selected content supports the  
source resource requirements of any of the compatible applications; and  
identifying each compatible application having source resource requirements that  
are satisfied by any source associated with the selected content as a selected application.

19. The method as set forth in claim 12, further including:  
accessing information associated with user preferences for each compatible  
application;  
accessing information associated with previous executions of each compatible  
application;  
accessing one or more graphs for each compatible application, each graph  
identifying resource requirements associated with the corresponding compatible  
application; and  
determining a qualitative rating for each graph based on at least one of the user  
preference information, the previous executions information, and information associated  
with a graph preference by the corresponding compatible application.

20. The method as set forth in claim 19, further including:  
selecting the compatible application with the highest qualitative rating to deliver  
the content.

21. The method as set forth in claim 19, further including:  
providing a list of the compatible applications including the qualitative ratings to a  
user for selection of the application to deliver the content.

22. The method as set forth in claim 21 wherein the list of the compatible applications provided to the user is limited to applications with qualitative ratings above a predetermined value.

23. The method as set forth in claim 12, further including:  
accessing information associated with the allocated state of resources within the consumer environment;

accessing one or more graphs for each compatible application, each graph identifying resource requirements associated with the corresponding compatible application;

determining if any available resource supports any of the resource requirements of any of the compatible applications; and

identifying each compatible application having resource requirements that are satisfied by one or more resources within the consumer environment as a selected application.

24. The method as set forth in claim 22 wherein a qualitative rating between 0 and 100 percent is associated with each selected application, the qualitative rating being related to the effect on the consumer environment of selecting that particular application to deliver the content.

25. The method as set forth in claim 24 wherein the effect on the consumer environment is at least associated with the use of scarce resources.

26. The method as set forth in claim 24, further including:  
selecting the selected application with the highest qualitative rating to deliver the content.

27. The method as set forth in claim 24, further including:  
providing a list of the selected applications including the qualitative ratings to a user for selection of the application to deliver the content.

28. The method as set forth in claim 27 wherein the list of the selected applications provided to the user is limited to applications with qualitative ratings above a predetermined value.

29. The method as set forth in claim 12, further including:

- f) receiving an initial location selection within the consumer environment to which the content is to be delivered;
- g) accessing information identifying the user interface requirements associated with each first-level compatible application;
- h) accessing a list of sink resources for delivering content in the consumer environment;
- i) accessing one or more graphs for each first-level compatible application, each graph identifying sink resource requirements associated with the corresponding first-level compatible application;
- j) determining if any sink resource in the initially selected location supports the user interface requirements and the sink resource requirements of any of the first-level compatible applications;
- k) identifying each first-level compatible application having sink resource requirements that are satisfied by one or more sink resources in the initially selected location as a second-level compatible application;
- l) accessing a list of sources of content associated with the consumer environment;
- m) identifying each source that provides any of the selected content;
- n) accessing one or more graphs for each second-level compatible application, each graph identifying source resource requirements associated with the corresponding second-level compatible application;
- o) determining if any source associated with any of the selected content supports the source resource requirements of any of the second-level compatible applications;
- p) identifying each second-level compatible application having source resource requirements that are satisfied by any source associated with the selected content as a third-level compatible application;
- q) accessing information associated with user preferences for each third-level compatible application;

- r) accessing information associated with previous executions of each third-level compatible application;
- s) accessing one or more graphs for each third-level compatible application, each graph identifying resource requirements associated with the corresponding third-level compatible application;
- t) determining a first qualitative rating for each third level compatible application based on at least one of a content qualitative rating, a user interface qualitative rating, an application qualitative rating, a user qualitative rating, a graph qualitative rating, and a graph mapper qualitative rating;
- u) accessing information associated with the allocated state of resources within the consumer environment;
- v) determining if any available resource supports any of the resource requirements of any of the third-level compatible applications; and
- w) identifying each third-level compatible application having resource requirements that are satisfied by one or more resources within the consumer environment as a selected application.

30. The method as set forth in claim 29, further including:

determining a second qualitative rating for each third level compatible application different from the first qualitative rating and based on at least one of a content qualitative rating, a user interface qualitative rating, an application qualitative rating, a user qualitative rating, a graph qualitative rating, and a graph mapper qualitative rating.

31. The method as set forth in claim 30, further including:

multiplying the first qualitative rating by the second qualitative rating to identify a composite qualitative rating for each selected application.

32. The method as set forth in claim 31, further including:

selecting the selected application with the highest composite qualitative rating to deliver the content.

33. The method as set forth in claim 31, further including:



providing a list of the selected applications including the composite qualitative ratings to a user for selection of the application to deliver the content.

34. The method as set forth in claim 32 wherein the list of the selected applications provided to the user is limited to applications with composite qualitative ratings above a predetermined value.

35. The method as set forth in claim 12, further including:

f) selecting a content source and at least one sink resource for delivering the selected content using at least two of:

- an initial location selection within the consumer environment to which the content is to be delivered;

- user interface requirements associated with each compatible application;
- sink resources available for delivering content in the consumer environment;

- sink resource requirements associated with the corresponding compatible application;

- sink resources in the initially selected location;

- sources of content associated with the consumer environment;

- sources that provide at least part of the selected content;

- source resource requirements associated with the corresponding compatible application;

- sources associated with any part of the selected content that supports the source resource requirements of any of the compatible applications;

- preferences for each compatible application;

- previous executions of each compatible application; and

- resource requirements associated with corresponding compatible applications;

g) identifying an optimized allocation of source, application, and sink resources for the users; and

h) delivering the selected content to a sink resource in the selected location.